REMARKS

Claims 24-39 are pending. Claims 1-23 and 40-42 were previously withdrawn. Claims 26 and 33-39 have been amended. No new matter has been added.

The drawings and the claims are objected to. Claims 24-39 are rejected. Claims 33-39 are rejected under 35 U.S.C. § 101 because independent claim 33 is directed to non-statutory subject matter. Claims 24-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,406,477 to Harhen in view of U.S. Patent No. 6,321,206 to Honarvar.

Objection to the Drawings

The drawings are objected to because the engine in Figure 1 should be marked with signal 140 because reference character 138 is used to designate the database and the engine. Figure 1 has been amended accordingly. Therefore, it is respectfully requested that the objection be withdrawn.

Objection to the Claims

Claim 26 has been objected to because the claim ends in a semicolon. Claim 38 has been objected to because of a typographical in the word "fiom." Claims 26 and 38 have been amended accordingly. Therefore, it is respectfully requested that the objection be withdrawn.

Rejection of Claims 33-39 under 35 U.S.C. § 101

Claims 33-39 are rejected under 35 U.S.C. § 101 because independent claim 33 is directed to non-statutory subject matter. Accordingly, claims 33-39 have been amended. Therefore, it is respectfully requested that the rejection of claims 33-39 under 35 U.S.C. § 101 be withdrawn.

Rejection of Claims 24-39 under 35 U.S.C. § 103(a)

Claims 24-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,406,477 to Harhen in view of U.S. Patent No. 6,321,206 to Honarvar. This rejection is respectfully traversed. Harhen and Honarvar, alone in combination, fail to teach each and every element of the pending claims. In fact, Harhen and Honarvar fail to teach most, if not all, of these elements.

One aspect of the present application involves loading a list of attributes for each site (*e.g.*, demographics of the neighborhood, proximity and intensity of each competitor, co-tenants, and store quality) and examining each attribute to understand its relationship to the impact of the tested action (*e.g.*, the sales lift generated by remodeling the store). Those attributes are then used to model which attributes impact performance most and that model is applied to all non-test sites to develop a specific prediction of the impact of extending the business initiative to each individual non-test location (*e.g.*, projecting the expected sales lift from a remodel if each site that hasn't been remodeled yet were to get a remodel). In one example, which can be carried out according to an embodiment of the invention described in claims 24 and 33, a company, such as a bank, has 500 branch locations and wants to install a new display to those branch locations to attract new or additional business. The bank would like to test the success of the new display in 25 of the branches before rolling out the display in all 500 locations. The bank would then use the invention to identify which factors cause the display to have a bigger impact in some branches than others (*e.g.*, did the display work better in more urban branches, higher income areas, bigger branches, etc.). The bank would then use this information to build a model that incorporates these factors to predict the impact of adding the display at each of the remaining 475 branch locations that were not tested. The predicted performance can be used to determine where the new display should be installed.

On pages 5-6 of the Office Action, the Examiner asserts that "Harhen teaches a method for analyzing a business initiative for a business network including business locations including test sites that have implemented the business initiative during a predetermined test period and non-test group sites that have not implemented the initiative, each of the sites being associated with a set of attributes," as recited in claims 24 and 33. Harhen recites building models generally based on independent variables for predicting a dependent variable, which is well known to one of ordinary skill in the art of statistics. However, Harhen fails to teach measuring a business initiative, such as the new display in the example above, using test sites and non-test sites. In fact, Harhen fails to provide any teaching related to analyzing or developing predictions based on business tests. In contrast, claims 24 and 33 recite the ability to take a tested action and build models to predict impact on non-test sites. Honarvar, which the Examiner does not assert for this element, fails to cure the deficiencies of Harhen.

On page 6 of the Office Action, the Examiner asserts that Harhen teaches "receiving, from a server, a list of the attributes ranked based on each attribute's impact on performance values associated with the test sites during the test period," as recited in claim 24 and similarly recited in claim 33. However, Harhen, including the citation by the Examiner, is directed to the generic notion that different independent variables are used in modeling. Harhen does not teach generating a ranked list of attributes based on the attribute's impact on performance values associated with test sites. So, referring back to the example above, Harhen does not rank attributes based on the degree to which they correlated with success in those 25 sites tested with the new display. Honarvar, which the Examiner does not assert for this element, fails to cure the deficiencies of Harhen.

The Examiner further asserts that Harhen teaches "configuring a model to predict the performance value of the sites based on the ranked list of attributes," as recited in claim 24 and similarly recited in claim 33. However, Harhen recites building an enterprise model to generate a single prediction for the enterprise, rather than an ability to build forecasts for each non-test location. As a result, Harhen cannot forecast the results of the new display for each of the remaining 475 branch locations in the example above. Honarvar, which the Examiner does not assert for this element, fails to cure the deficiencies of Harhen.

The Examiner also asserts that Harhen teaches "instructing the server to execute the model for the test sites," as recited in claim 24 and similarly recited in claim 33. However, Harhen, including the citation by the Examiner, recites the use of multiple modeling methodologies for a given set of independent variables and a given dependent variable. Harhen does not relate to generating models based on how test locations performed relative to control locations during a test. As a result, using the example above, Harhen does not build models based upon the 25 tested branch locations. Honarvar, which the Examiner does not assert for this element, fails to cure the deficiencies of Harhen.

Further, the Examiner asserts that Harhen teaches "receiving results of the executed model, wherein the results include quantitative measures of the model's ability to accurately predict the performance levels of the test sites," as recited in claim 24 and similarly recited in claim 33. However, Harhen, including the citation by the Examiner, recites resolving competing statements by using completely arbitrary criteria, such as the most recent statement will be used. But basing the decision criteria on most recent statement does not teach measuring a model's

ability to accurately predict performance levels. Indeed, Harhen's resolution of competing statements is irrelevant to quantitatively measuring a model generated for the test sites, such as those models generated for the 25 tested branch locations. Honarvar, which the Examiner does not assert for this element, fails to cure the deficiencies of Harhen.

In addition to the above-described elements that are not taught by Harhen, the Examiner asserts that Honarvar cures the deficiencies of Harhen. However, Honarvar is quite distinct from the claimed invention. Honarvar recites a system for recommending the best approach for each category of customers based on testing a strategy with some customers and comparing them to control customers in the same category. Honarvar's approach is restricted to a limited set of user-defined customer categories (*e.g.*, bronze, gold, and platinum customers) that are designated in advance. *See, e.g.*, Figure 9.

In contrast, the pending claims are directed to methods that look across all attributes (potentially thousands) known for some or all test locations (*e.g.*, the 25 branch locations of a bank in the example above) to automatically identify which attributes drive the test to work better in some locations. Each time a new attribute is considered, each test location is dynamically mapped to the control locations that are similar for that attribute in order to more accurately measure the importance of that attribute. For example, when looking at income, high income test locations are compared to high income control locations and low income test locations are compared to low income control locations. In the example regarding the use of a new display for bank branch locations, attributes (such as the size of the location or the distance to another bank) are considered for each of the tested 25 branch locations to determine the attributes with the greatest impact. The use of many attributes allows for a more robust and accurate prediction model. Unlike the claimed invention, Honarvar's approach of using static and pre-defined categories would not work when applied to potentially thousands of unique categories.

Further, Honarvar explicitly chooses not to report or predict performance for any individual customer. Honarvar uses simple reporting, *e.g.*, if tested idea 1 worked better than tested idea 2 for bronze customers, than all bronze customers get tested idea 1 going forward. *See* Col. 11, lines 54-64 ("Generally in step 230, it is not desirable to report on a specific client, but how well a specific test group or strategy performs… An aggregate performance data measure can then be determined for all clients meeting this criteria. In this manner, it can be evaluated

how well a certain test group or category performed, instead of how well a specific client performed.   Thus strategy performance can be evaluated, instead of individual client performance."). In contrast, the claimed invention allows a prediction of expected performance for each individual non-test location, given hundreds of attributes about that location and which of those attributes drove differential performance in the test. As shown in the example above, a separate prediction can be made for each of the remaining 475 branch locations.

Honarvar runs tests with customers and a large customer base, rather than testing business locations. Indeed, Honarvar's approach only works in customer tests and is impractical for tests run in business locations. *See* Col. 2, lines 31-32 (Honarvar recites that the key characteristics of all business problems is that "each involves a large customer base and a high volume of customer interactions"). Honarvar requires a large customer base and a large sample size and would not be operable with located-based tests, which are required by the pending claims, because the sample size of a location-based test is too small for Honarvar's approach to be practical. This is evidenced by Honarvar's examples, which all relate to customer-based tests with very large samples. Honarvar contemplates a separate row for each unique combination of segment, test group, category, and report group. *See* Fig. 12; col. 12, lines 22-23 ("Each row can be thought of as being a unique intersection of values for all dimensional columns"). In the example shown in Figure 12, there are 4 segments, 2 test groups, 3 categories and 5 report groups. This results in (4*2*3*5) 120 unique rows of performance data, where rows are "mutually exclusive and completely exhaustive," meaning that each observation must appear in one row but only one row – so that the sum of observations across rows will equal the total sample size of the test. Honarvar then recites requiring multiple observations for each unique row. Col. 11, lines 54-64 ("Generally in step 230, it is not desirable to report on a specific client, but how well a specific test group or strategy performs... An aggregate performance data measure can then be determined for all clients meeting this criteria."). So Honarvar averages multiple observations in a given row. Because Honarvar requires at least several observations per row and there are 120 rows, Honarvar's teaching requires a sample of at least a thousand. If instead there were 120 rows, but only 25 test locations (as in the example given above), then most rows would not have a single observation, much less the multiple observations envisioned by Honarvar. Therefore, Honarvar is not practical for a location-based test and is only relevant for customer-based tests with large sample sizes.

More specifically, Honarvar does not cure the deficiencies of Harhen with respect to the pending claims. On page 6 of the Office Action, the Examiner recognizes that "Harhen does not expressly teach instructing the server to apply the model to the non-test group sites to predict the performance levels of the non-test group sites based on a determination that the model accurately predicts the performance levels of the test sites," as recited in claim 24 and similarly recited in claim 33. In asserting that Honarvar recites this element, the Examiner cites to col. 5, lines 37-40 and col. 6, lines 26-29 of Honarvar. However, neither these citations nor the remainder of Honarvar recites this feature. The first citation is directed to measuring how a test group performs relative to control on average, but does not recite applying a model to develop a projection for each non-test location. The second citation is directed to building a system to continually run tests, but again does not recite projecting results. As a result, based on the example above, Honarvar does not apply to a model generated based on the tested 25 branch locations and applied to the remaining branch locations. Therefore, Harhen and Honarvar fail to teach "instructing the server to apply the model to the non-test group sites to predict the performance levels of the non-test group sites based on a determination that the model accurately predicts the performance levels of the test sites," as recited in claim 24 and similarly recited in 33.

Further, on page 6 of the Office Action, the Examiner recognizes that "Harhen does not expressly teach ... receiving a list of non-test group sites ranked based on each non-test group site's predicted performance level," as recited in claim 24 and similarly recited in claim 33. In asserting that Honarvar recites this element, the Examiner cites to col. 8, lines 62-67. However, neither this citation nor the remainder of Honarvar recites this feature. This citation recites how different types of functions can be tested, wherein a function is a strategy for how to treat test customers. But Honarvar does not recite generating a list ranking non-test locations based on their predicted performance level. In fact, Honarvar specifically teaches away from generating a prediction for each non-test group site, instead requiring an evaluation of an entire group. *See* Col. 11, lines 54-64 ("Generally in step 230, it is not desirable to report on a specific client, but how well a specific test group or strategy performs.... An aggregate performance data measure can then be determined for all clients meeting this criteria. In this manner, it can be evaluated how well a certain test group or category performed, instead of how well a specific client performed. Thus strategy performance can be evaluated, instead of individual client

performance."). In the example provided above, a bank testing 25 branch locations for a new display could then rank the remaining branch locations based on their predicted performance. Because Honarvar creates only "aggregate performance data measure(s)," Honarvar cannot provide this function. Therefore, Harhen and Honarvar fail to teach "receiving a list of non-test group sites ranked based on each non-test group site's predicted performance level," as recited in claim 24 and similarly recited in claim 33.

Harhen and Honarvar fail to teach each and every element of claims 25 and 34 in addition to the reasons set forth above. On page 7 of the Office Action, the Examiner asserts that "Harhen and Honarvar teach all of the features of claim 24 and Honarvar further teaches selecting a subset of the non-test group sites to implement the business initiative based on the ranked list of those sites," as recited in claim 25 and similarly recited in claim 34. Honarvar recommends a treatment to provide to all customers in each category, *e.g.*, all bronze customers should get test treatment 1 or all bronze customers should get test treatment 1, report group B. *See* Figure 12. So Honarvar provides all customers in the same test cell with the same recommendation and predicted performance. Honarvar does not predict for each individual non-test group site. Instead, Honarvar uses their membership in a static, pre-determined category. In contrast, claims 25 and 34 can provide a ranked list of non-test locations based on "each non test-group site's predicted performance." The invention in claims 25 and 34 can look across thousands of attributes to identify which attributes drive some locations to respond differently to a test than others and model a predicted impact unique to each individual non-test group site. In fact, Honarvar teaches away by reciting that all reports and predictions will be averages for all members in a pre-defined category and that there is no analysis of individual customers. Col. 11, lines 54-64 ("Generally in step 230, it is not desirable to report on a specific client, but how well a specific test group or strategy performs... an aggregate measure can then be determined for all clients meeting this criteria. In this manner, it can be evaluated how well a certain test group or category performed, instead of how well a specific client performed. Thus strategy performance can be evaluated, instead of individual client performance."). Because Honarvar is not evaluating or predicting individual client performance, Honarvar cannot generate a ranked list by site. Therefore, Harhen and Honarvar fail to teach "selecting a subset of the non-test group sites to implement the business initiative based on the ranked list of those sites," as recited in claim 25 and similarly recited in claim 34.

Harhen and Honarvar fail to teach each and every element of claims 32 and 36 in addition to the reasons set forth above. On page 10 of the Office Action, the Examiner asserts that "Harhen does not teach; however, Honarvar does teach, wherein the non-test group sites includes a set of control group sites and performance values is generated by the server based on comparisons between test site fragments and corresponding control group site fragments, wherein each fragment is generated by the server based on each respective site's attribute value and performance value," as recited in claim 32 and similarly recited in claim 36. Honarvar recites that categories are established in advance of a test so that sub-groups within each category can be assigned to different test cells. *See, e.g.,* Figure 8 (categories are assigned before test cells are developed). Each instance of Honarvar's method involves the use of a single category, e.g., bronze, gold, or platinum. *See, e.g.,* Figure 9. So, Honarvar relies on one or very few sets of categories that are established in advance of test cell assignment. In contrast, claims 32 and 36 recite the ability to measure results across an unconstrained set of attributes (potentially thousands) that are not defined in advance of the test but can be measured *post hoc*. As a result, each time an attribute is assessed, the test group and control groups are dynamically re-segmented to compare similarities for each category. For example, when looking at income, high income test is compared to high income control and low income test is compared to low income control. But when looking at a size of a store, income is ignored and big test stores are compared to big control stores, and small test stores are compared to small control stores. Honarvar's approach would not work when looking across hundreds of attributes. Honarvar recites a pre-configured matrix with limited and known categories, but does not provide the ability to scan across thousands of categories and match test fragments to control fragments for each category. Therefore, Harhen and Honarvar fail to teach "wherein the non-test group sites includes a set of control group sites and performance values is generated by the server based on comparisons between test site fragments and corresponding control group site fragments, wherein each fragment is generated by the server based on each respective site's attribute value and performance value," as recited in claim 32 and similarly recited in claim 36.

Therefore, Harhen and Honarvar, alone or in combination, fail to teach each and every element of claims 24-39. Because claims 24 and 33 are believed to be allowable, claims 25-32 and 34-39 are also believed to be allowable. Thus, it is respectfully requested that the rejection under 35 U.S.C. § 103(a) be withdrawn.

<u>CONCLUSION</u>

In view of the forgoing remarks/arguments, each of the claims in the application is believed to be in condition for immediate allowance. Accordingly, the Examiner is respectfully requested to reconsider and withdraw the rejection and to pass the application to issue. If the Examiner believes that the prosecution might be advanced by discussing the application with the undersigned representative, in person or over the telephone, we welcome the opportunity to do so. No additional fees are believed due; however, the Commissioner is hereby authorized to charge any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-4402.

Respectfully submitted,

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